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SUB-COMMITTEE OF EXPERTS ON THE
TRANSPORT OF DANGEROUS GOODS

REPORT OF THE SUB-COMMITTEE OF EXPERTS ON ITS SECOND SESSION (15-26 January 1990)

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1. The Sub-Committee of Experts on the Transport of Dangerous Goods held its second session from 15 to 26 January 1990. The session was attended by experts from the following countries: Canada; China; France; Germany, Federal Republic of; India; Italy; Japan; Netherlands; Norway; Poland; Sweden; Union of Soviet Socialist Republics; United Kingdom; United States of America. Observers from Australia, Austria, Belgium, Finland, Spain and Switzerland participated in accordance with rule 72 of the rules of procedure of the Economic and Social Council. Representatives of the United Nations Environment Programme (UNEP) were also present. Representatives of the following specialized agencies and intergovernmental organizations attended the session: International Labour Organisation (ILO); World Health Organization (WHO); International Civil Aviation Organization (ICAO); European Economic Community (EEC); Central Office for International Railway Transport (OCTI). Representatives of the International Road Transport Union (IRU), the European Council of Chemical Manufacturer's Federations (CEFIC), the European Fertilizer Manufacturers' Association (EFMA), the European Secretariat of Manufacturers of Light Metal Packaging (SEFEL) the Hazardous Materials Advisory Council (HMAC) and the Permanent International Committee on Industrial Gases and Calcium-Carbide (CPI) took part in the discussions when items of concern to their Organizations were considered.

2. The session was opened by a member of the secretariat.

ADOPTION OF THE AGENDA

3. The Secretary drew attention to an error in the draft agenda (ST/SG/AC.10/C.3/3): Sub-items (a), (b) and (c) should appear under item 8 instead of item 5. Subject to this correction the provisional agenda was adopted.

ELECTION OF OFFICERS

4. Mr. L. Grainger (United Kingdom) and Mr. J. Monteith (Canada) were unanimously elected Chairman and Vice-Chairman respectively.

ADMINISTRATIVE MATTERS

5. The Chairman welcomed the representative of India which was now a full member of the Committee and its Sub-Committee of Experts. The Sub-Committee regretted the absence of a representative of the International Maritime Organization (IMO) since his presence was essential in order to achieve intermodal harmonization. The secretariat was requested to write to IMO and ICAO reiterating the importance of regular participation by those organizations in order to promote intermodal harmonization.

6. The expert from the United States of America requested a general discussion under agenda item 6 concerning the interpretation by States of chapter 9 of the United Nations Recommendations. As the deadline approached for implementation of the new packaging provisions, differences of interpretation were becoming crucial. His request was agreed. The expert from the Netherlands requested a short discussion on the draft ILO Convention "Safety in the use of chemicals at work". This was agreed and the Secretary was asked to contact the appropriate officials in ILO with a view to their participation in the discussion.

7. The secretariat distributed copies of document ST/SG/AC.10/1/Rev.6 (United Nations Recommendations) in English and in French. The observer from ICAO asked why there were no vertical lines in the margin to provide an easy identification of the changes since the Fifth Revised Edition. The Secretary explained that this had been done in the preprint sent to experts and observers for advance information in July 1989 but the constraints on time and resources in the secretariat had prevented such lines being transcribed into the published editions. Experts were invited to reconsider the value of such lines when the Committee considers the Seventh Revised Edition in December 1990. The expert from the Federal Republic of Germany, while expressing appreciation for all the work which the secretariat had put into the publication of the new edition, asked that consideration should be given next time to the use of alternative characters, font and pitch in order to improve legibility of the text. The secretariat took note of this request and drew the attention of experts to the forthcoming publication of the ADR in which, as an experiment, the English text was in pitch size 15 whereas the French was in size 12. Comments from readers would be welcomed concerning legibility.

8. Information was then provided on all the documents to be considered during the session and their assignment to the items on the agenda. There were 24 documents carried over from the first session; 29 new documents which had been received prior to 6 November 1989 (10 weeks rule); 15 new documents which had been received too late for translation and had therefore been published in the original language(s) only; and 12 papers which had been received so late that they could not be published officially at all. The secretariat distributed photocopies of those 12 */ so-called information papers. The Chairman drew attention to the difficulty of having a fruitful discussion and making sound decisions on the basis of papers systematically submitted after the prescribed deadlines.

REVISION OF DIVISION 4.1

9. As indicated in footnote a/ to the provisional agenda, it was planned to set up a working group on this subject during the first week of the session. The Chairman reminded experts that the terms of reference for this working group had been agreed during the previous session of the Sub-Committee (see paragraph 76 and annex 4 of document ST/SG/AC.10/C.3/2). The documents to be considered by the working group were ST/SG/AC.10/C.3/R.8, -/C.3/R.46, -/C.3/R.47, -/C.3/R.54, and -/C.3/R.61 together with two new proposals by the Netherlands. The authors of those documents and proposals introduced them briefly and there was a short discussion of general principles so that the working group was aware of the policy to be followed during its deliberations.

10. The only contentious issue concerned document ST/SG/AC.10/C.3/R.54. Opinions were expressed for and against reversing a decision taken during the first session of the Sub-Committee. Finally, it was decided by a vote that the working group should stick to the previous decision not to introduce a new

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*/ Another 12 informal papers were handed to the secretariat during the session for photocopying and distribution. This report does not attribute identifying symbols to such papers; they are mentioned simply as proposals by the expert or observer concerned.

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Division 4.4 but to accommodate all the substances under consideration within Division 4.1. It was agreed that Mr. T. Groothuizen (Netherlands) would lead the working group.

11. Mr. T. Groothuizen subsequently presented the report of his working group and the expert from the Netherlands sponsored it for discussion. Since copies were available only in English, it was read through the interpreters. The Chairman requested the Netherlands to submit the report as a free-standing document for further examination during the third session (ST/SG/AC.10/C.3/R.80).

12. The working group had discussed the documents listed in paragraph 9 above as well as document -/C.3/R.9 in great depth and in spite of differences of opinion had reached a consensus on all the major issues. It had identified three distinct families of substances within the proposed new Division 4.1 and sought decisions by the Sub-Committee on the future name of Division 4.1 and whether those "families" should be designated subdivisions, groups or categories, etc. A closely related question was whether they should be distinguished during transport by three different designs of label, by distinctive marks or text on a single design of label, or by some other method.

13. It was acknowledged that the working group had had the opportunity to discuss in depth the reasons for distinguishing three families of substances within Division 4.1 but it was felt the Sub-Committee should not accept this premise as a basis for the consequential decisions without some justification. If the working group had assumed that the modal authorities, particularly IMO, would welcome this separation of Division 4.1 into three components so that they could use the distinction in regulatory provisions for segregation and stowage, then it was essential to verify this before proceeding on a course which might entail the proliferation of labels. It was most unfortunate that the observer from IMO was unable to be present.

14. The reasons for the distinctions were explained to the Sub-Committee. In terms of properties, i.e. the hazards involved in transporting the substances, the working group believed there was a strong case for distinguishing wetted explosives and thermally stable energetic substances from self-reactive (thermally unstable) substances; and for distinguishing them from the third family, the other flammable solids (and possily liquids) in Division 4.1.

15. The working group felt that IMO might have established different stowage conditions, in Amendment No. 25 to its IMDG Code, for these three families of substances if the United Nations Recommendations had made provision for the distinction. It was a chicken-and-egg situation.

16. The experts from France, the Federal Republic of Germany, the Netherlands, the United Kingdom and the Union of Soviet Socialist Republics accepted the case for distinguishing three families of substances in the new Division 4.1, which might be characterized as fast-burning, thermally unstable and desensitized explosive substances respectively. However many experts and the observers from CEFIC, ICAO and HMAC did not accept the argument for a consequential introduction of three formal subdivisions within the division. Most speakers stressed the serious burden on the modal authorities and industry if there was a proliferation of labels or variants of the existing label for Division 4.1 without any significant increase in safety.

17. The Chairman called for a vote on three decisive issues and the expert from the United States of America asked for the first one, dealing with the introduction of further designs of label, to be a roll-call vote. On the question "Should the three families of substances within Division 4.1 be identified during transport by three different labels?", the following eight experts voted in favour ("Yes"): China, the Federal Republic of Germany, the Netherlands, Norway, Poland, Sweden, the United Kingdom and the Union of Soviet Socialist Republics. Five experts voted against ("No"): Canada, France, Italy, Japan and the United States of America. There were no abstentions. The expert from India was not present.

18. The second issue concerned a modification of the second option suggested by the working group (i.e. the system described in the sixth sentence of paragraph 10 of its report, excluding the use of a subdivision number in the bottom corner as described in the seventh sentence). This was summarized by the Chairman as "Should there be three variants of the existing single label for Division 4.1, each one having the number '4' in the bottom corner, the distinction being made by the colour or by stripes in half of the label?". The Sub-Committee voted against ("No") by 7 votes to 3 abstentions.

19. A third option was formally to designate the three families of substances as subdivisions 4.1.1, 4.1.2 and 4.1.3 and to identify them during transport by displaying the number of the subdivision on the existing label for Division 4.1, in a manner analogous to that used on the label for Class 5 to distinguish Division 5.1 from Division 5.2. This was put to the vote in the form of the question "Should the existing label for Division 4.1 be retained and the distinction be shown by the use of a subdivision number in the bottom corner?". The Sub-Committee voted against it ("No") by 2 votes to 1 with 10 abstentions.

20. Several experts remarked on the significance of the voting, especially the last vote. The secretariat was requested to set down in the report a clear description of the three issues in order to clarify the situation. All members of the Sub-Committee were requested to review their positions and take full account of the impact of any final decisions upon the modal authorities and industry, in preparation for further discussion during the third session. In view of its importance, the discussion would be held in plenary rather than in a working group.

21. The expert from the United Kingdom was invited to submit revised versions of his documents -/C.3/R.46 and -/C.3/R.47, taking into account the discussions during the current session.

22. It was agreed that the working group should resume its tasks during the first week of the third session. Since specialists in Class 1 might wish to participate in the working group, the secretariat was requested to place the substantive (plenary) discussion on Class 1 on the agenda for the beginning of the second week, to avoid conflicting demands upon those specialists.

MANUAL OF TESTS AND CRITERIA: TEST FOR SELF-REACTIVE SUBSTANCES

23. Before the working group on Division 4.1. had commenced its work, there had been a short discussion on the Manual on Tests and Criteria (ST/SG/AC.10/11) so that the working group could consider the project to revise the Manual. The objectives were set out in paragraph 72 and the terms

of reference in paragraph 76 (c) of document ST/SG/AC.10/C.3/2. The observer from CEFIC was assured that the working group would not consider changing the tests for class 1 during the session; that would be carried forward to the third session when explosives experts would be present. The expert from the Union of Soviet Socialist Republics confirmed that his documents on class 1 should be carried forward to the third session. The comments made by the working group after its initial consideration of document ST/SG/AC.10/C.3/R.9, dealing with rationalization of the Manual on Tests and Criteria, are given in paragraphs 18 and 19 of its report (see para. 11 above).

TESTING OF COMBINATION PACKAGINGS

24. The Vice-Chairman led the discussion on this item. He reminded experts of the earlier discussion reported in paragraphs 31 and 32 of document ST/SG/AC.10/C.3/2. Document ST/SG/AC.10/C.2/R.661 had been brought forward and the following new documents had been submitted: ST/SG/AC.10/C.3/R.41, -/C.3/R.52, -/C.3/R.56, -/C.3/R.59, -/C.3/R.71 and -/C.3/R.73. Document -/C.3/R.59 duplicated, in error, document ST/SG/AC.10/C.3/R.41 and was withdrawn. The experts from the Netherlands and Sweden made new proposals on combination packagings.

25. The authors of those documents and new proposals were invited to outline their objectives after which there was a short discussion to establish the extent of support for or criticism of each one. A number of drafting suggestions were elicited. Areas of common ground were identified.

26. After considerable discussion of the text of amendments to the Recommendations proposed in documents ST/SG/AC.10/C.3/R.41, -/C.3/R.52 and -/C.3/R.71, revised amendments were developed in the plenary session and then adopted as shown in annex 1 to this report. The Sub-Committee placed square brackets around paragraph 9.7.1.6 (a) (6) of the amendment derived from document -/C.3/R.41 and it agreed to reconsider this paragraph during the third session.

27. After discussion of document ST/SG/AC.10/C.3/R.73 together with a new proposal by the expert from Sweden, it was agreed that the proposals merited careful study and further discussion during the third session. The expert from Sweden said that she would revise her proposals and make a new submission for that session. Meanwhile experts were invited to regard her current proposals as being for information only.

28. Document ST/SG/AC.10/C.3/R.56 from HMAC was sponsored by the experts from Canada and the Netherlands. It distinguished two problem areas: selective testing of packagings used routinely and, on the other hand, unique packagings used on a single occasion only. There was general agreement that HMAC had identified problems which required urgent solutions but experts were unable to agree on the best way forward. One suggestion was that exceptional packagings used for one-off consignments should be subjected to the drop-test using twice the standard height; an alternative was to use the standard height but to restrict the contents to half the gross mass that was used during the test. Packaging specialists were invited to meet in an informal working group outside the plenary session to develop technical solutions.

29. When the Sub-Committee resumed discussion on document ST/SG/AC.10/C.3/R.56, the written proposal developed by the informal working group was carefully examined. Subject to a number of editorial changes, together with an additional proposal concerning paragraph 9.5.1 (g), the written proposal was adopted as shown in annex 1 to this report.

30. The Sub-Committee later reverted to document ST/SG/AC.10/C.3/R.52 (see para. 26 above) in which the expert from the United Kingdom had proposed an amendment to paragraph 9.7.1.6 of the Recommendations (see para. 5 (a) of the document). After further discussion this proposal was withdrawn.

OTHER PERTINENT MATTERS CONCERNING PACKAGING (INCLUDING IBCs)

31. The Vice-Chairman asked the Sub-Committee to give priority to a new set of proposals by SEFEL and the expert from the Netherlands sponsored them. During the previous session document ST/SG/AC.10/C.3/R.23 by SEFEL had not been adopted because there was no definition for the term "light gauge metal packagings" (LGMP) and the quality assurance programme needed to be specified more clearly.

32. The observer from SEFEL described a quality assurance programme in some detail and referred to ISO 9000/4 and ISO 2859. This statistical testing procedure would be extended to all packagings intended to contain liquids. Several experts were sympathetic to the aims of SEFEL since there was a real problem in testing during very high speed manufacture (in excess of 2,000 articles per hour). Others considered there was insufficient scientific justification. A substantial majority of experts expressed strong opposition to pursuing a proposal to develop special rules for one type of packaging at this time. The observer from SEFEL was assured that there was no objection to his submitting a revised proposal on another occasion but that it should take full account of the comments expressed.

33. The proposal in document ST/SG/AC.10/C.3/R.43 was amended so as to add the packing group where this had been assigned and listed in chapter 2 of the Recommendations. It was then adopted by a vote of 9 to 2 and is reproduced in annex 1 to this report.

34. The expert from the Netherlands proposed a small change to paragraph 13.8.4 of the Recommendations (see ST/SG/AC.10/C.3/2, para. 94). Part of his proposal was adopted as shown in annex 1 to this report. A second part concerning packing group I was rejected.

35. The proposal in document ST/SG/AC.10/C.3/R.62 was modified at the suggestion of the expert from the United States of America so that special provision 41 would be deleted throughout the Recommendations. This more extensive proposal, as shown in annex 1 to this report, was adopted instead of the original proposal by a vote of 8 to 2.

36. The proposal in document ST/SG/AC.10/C.3/R.65 evoked many comments and questions concerning the reasons behind the current provisions for the testing of IBCs. Some experts believed that the proposal in the document had identified a simple oversight which should be rectified without making an issue of the matter. Others believed that it had revealed inconsistencies in chapter 16 which required more extensive amendments. A rather radical proposal by the expert from Sweden, which would have made the régime of

testing more restrictive was withdrawn after considerable debate. The observer from CEFIC proposed orally that there should be an extension to the proposal in the document but this was not agreed. The original proposal which was adopted by a vote of 5 to 4 is shown in annex 1 to this report.

37. The proposal in document ST/SG/AC.10/C.3/R.66 was sponsored by the expert from the United Kingdom. It was adopted as shown in annex 1 to this report.

REVIEW OF DIVISION 6.2 (INFECTIOUS SUBSTANCES)

38. It was recalled that this major review in the current biennium had begun during the previous session and was reported in paragraphs 58 to 65 of document ST/SG/AC.10/C.3/2. The authors introduced the following documents in order to highlight the purpose of each one: ST/SG/AC.10/C.3/R.22, -/C.3/R.39, -/C.3/R.40, -/C.3/R.53, -/C.3/R.74 and -/C.3/R.75. The expert from the Federal Republic of Germany confirmed that his new document -/C.3/R.53 supplanted the earlier document ST/SG/AC.10/R.218.

39. After these introductory statements the Chairman welcomed three observers from the World Health Organization (WHO). They emphasized that WHO did not consider itself competent to advise the Sub-Committee on highly specialized aspects of packaging for infectious substances; nor was it able to assess the impact on the transport industry of any advice it might give. Subject to these reservations WHO would be willing to do all it could to assist the Sub-Committee in its deliberations. A new revision of the WHO "Laboratory Biosafety Manual" (1983) would begin in April 1990. The secretariats were requested to maintain liaison so that the Sub-Committee's deliberations could be taken into account.

40. The Sub-Committee discussed the matter of wastes containing infectious substances such as hospital wastes. Several experts deplored international transport of such wastes though the expert from Canada pointed out that sometimes this might involve less overall risk than would a very long intranational journey to a waste disposal site. There was a consensus that such waste should in general be decontaminated at source. It was considered that paragraph 13.6.1.2 of the United Nations Recommendations might require amendment so as to exclude waste contaminated with infectious substances. There was some discussion of the distinction between substances liable to cause disease in humans and animals and, on the other hand, those liable to cause disease in plants. The Committee's work had never included plant pathogens though the subject had been mooted every five years or so. It was observed that there was no specific written proposal dealing with plant pathogens.

41. The Chairman proposed that the Sub-Committee should first deal with proposals for definitions of basic terms. In document ST/SG/AC/10.C.3/R.39 the expert from Canada proposed a new definition in paragraph 1.23 of the Recommendations for the term "infectious substances". Subject to a small deletion, the proposal was adopted as shown in annex 1 to this report. The proposal by the expert from the Federal Republic of Germany in document ST/SG/AC.10/C.3/R.53, to add a new note in paragraph 6.9 of the Recommendations in order to explain the status of toxins devoid of infectious subtances, was adopted with a small change and added to the definition in paragraph 1.23 of the Recommendations mentioned above.

42. The adopted definition for "infectious substances" included a list of examples. Some experts proposed the deletion of those examples but the Sub-Committee decided by a vote of 10 to 3 to retain them. It was noted that the inclusion of recombinant, hybrid or mutant micro-organisms provided a partial solution to the question raised by the observer from the Commission of the European Community during the session. It was recognized that the EEC also needed advice on substances liable to cause disease in plants. A proposal to convert the list of examples into a separate note in the Recommendations was defeated by a vote of 9 to 2.

43. The next definition considered was the proposal in document ST/SG/AC.10/C.3/R.39 (proposal 3 (a)) to modify the existing note in paragraph 1.23 in the Recommendations. The proposed change was not adopted by a vote of 8 to 4 so that the existing text remained unchanged.

44. Turning to chapter 6 of the Recommendations the Sub-Committee adopted the proposal in document -/C.3/R.39, paragraph 2 (b) to amend the existing definition of infectious substances in paragraph 6.9 (a) of the Recommendations. The note to paragraph 6.9 (a) remained unchanged.

45. The Sub-Committee confirmed that the definition of biological products in paragraph 6.9 (b) of the Recommendations should remain unchanged. It then accepted a proposal from the expert from the United States of America to move the existing text from paragraph 6.10 in order to make it a note to paragraph 6.9 (b). It was agreed that the text of paragraph 6.9 (c) should remain unchanged.

46. The Sub-Committee then discussed the classification of infectious substances. Documents ST/SG/AC.10/C.3/R.40 (para. 2 (b)) and -/C.3/R.53 proposed the adoption of Risk Groups II, III and IV from the WHO Biosafety Manual (1980) in order to rank the hazards of substances in Division 6.2. Substances in the WHO Risk Group I would not be regarded as dangerous substances for transport purposes. After the observer from WHO had described the rationale for those risk groups (which were intended for the classification of laboratories handling infectious substances) and had acknowledged their limitations for transport purposes, the Sub-Committee did not pursue their application to packaging. It was agreed to retain the existing provisions on packaging for all types of infectious substance.

47. Some experts proposed that the risk groups should be adopted to the extent that they might be shown on transport documents to aid prompt emergency response in the event of an accident with such a package. The proposal was rejected by a vote of 6 to 3.

48. The Sub-Committee noted the view of the Federal Republic of Germany, in paragraph 3 of document -/C.3/R.53, that transport of wastes of class 6.2 by air or sea was very rare so that there was no need for extensive provisions in the Recommendations. The expert from the United States of America made two oral proposals for additions to paragraph 6.11 of the Recommendations in order to give explicit guidance on infectious waste. These were alternatives but neither was supported because several experts argued that such wastes were not special. The proposals were withdrawn.

49. The expert from Canada asked if references to infectious substances in animals meant sick animals or animals intentionally made host to infection. The observers from WHO advised that it was the latter.

50. The proposal in document ST/SG/AC.10/C.3/R.44 sought to distinguish toxins associated with infectious substances (division 6.2) from toxins devoid of infectious substances by introducing new entries for the latter. Several experts suggested there was a need to define the word "toxin". At first there was support for the proposal and consideration was given to the possible use of the proper shipping name "TOXINS, TECHNICALLY PURE, SOLID, N.O.S.". However, several experts opposed the new entry as unnecessary and the expert from Canada withdrew his proposal. An oral proposal to pursue the new entry, in spite of the withdrawal, was rejected by a vote of 5 to 4.

51. The proposal in document -/C.3/R.53 to introduce a dynamic crush test in paragraph 6.14 of the Recommendations was not adopted. Experts considered this test was too stringent and that the existing texts were adequate.

52. An oral proposal by the expert from Canada, to change the word "and" into "or" in paragraph 6.13.3 of the Recommendations (line 2 in the English version) was adopted. The Chairman asked experts to ensure that their national members of ICAO's Dangerous Goods Panel concurred with this, before the United Nations Committee's sixteenth session in December 1990 was requested to endorse the amendment.

53. The expert from the United States of America maintained that in spite of the decision not to adopt the WHO risk groups, his proposals in paragraph 6.18 of document -/C.3/R.22 remained valid. There was a problem to identify those infectious substances which presented so little risk that, provided they were adequately packaged, they might be exempted from all other provisions in Division 6.2. The expert from Canada said the proposal by the United States of America tackled the problem of diagnostic specimens which might contain some level of infectious substances. New entries should be introduced for diagnostic specimens and biological products in Division 6.2.

54. The Chairman recapitulated the discussions and decisions during the current session. Diagnostic specimens were not to be divided into two types. The expert from the United States of America sought to re-open the discussion since he could suggest a way to extend the heading of Division 6.2 so as to embrace infectious substances, diagnostic specimens and biological products. The expert from France observed that the voluminous documents for the current session had resulted in few decisions; perhaps the explanation was that basically the existing Recommendations were adequate and should not be amended.

55. Later the expert from the United States of America distributed an informal paper giving proposals developed by a working group during the session after reviewing the proposals in documents -/C.3/R.22 and -C.3/R.53. The expert from Norway opposed the proposal by the working group to delete the first note to paragraph 6.9 (a) in the Recommendations; he proposed that the Sub-Committee should stick to the decisions made earlier in the session. It was observed that the working group was not proposing a fundamental change to the definitions; it was simply trying to clarify the effect of the earlier decisions. The expert from the Union of Soviet Socialist Republics said that the proposals from the working group would have been acceptable to him earlier in the session but that now they contradicted the earlier decisions so that he could not support the results of the working group.

56. Several experts remarked that the text from the working group did not cover all contingencies. There was no mention of the provisions applicable to large quantities of biological products or diagnostic specimens which were known not to contain infectious substances. The Sub-Committee completed a first reading of the text proposed by the working group. Several experts considered that the phrases "other biological products" and "other diagnostic specimens" were ambiguous so the expert from the United States of America undertook to improve the drafting of the proposals from the working group taking account of the above comments. When the editorial revision was completed, the report of the working group was then submitted to the secretariat for publication in annex 2 to this report.

REVIEW OF CLASS 2 (GASES)

57. It was recalled that the Committee of Experts during its fifteenth session had rejected some of the proposals from the then Group of Rapporteurs and had asked the Sub-Committee to undertake a major study on the classification of gases and mixtures of gases. During the first session the majority had accepted that there should be three divisions in Class 2 and that they should be as shown in document ST/SG/AC.10/C.3/R.12, annex 1. All new submissions were to be based on that text. Authors were particularly requested to revise their documents in the light of the discussions during the first session without raising old issues again. The secretariat had been requested to provide three sub-items for this subject on the agenda.

58. The old documents brought forward from the previous session were: ST/SG/AC.10/R.203 and -/R.209; ST/SG/AC.10/C.2/R.604, -/C.2/R.671 and -/C.2/R.672; ST/SG/AC.10/C.3/R.4, -/C.3/R.5, -/C.3/R.12, -/C.3/R.15 and -/C.3/R.31. The authors of all new documents introduced their documents. These comprised ST/SG/AC.10/C.3/R.32, -/C.3/R.33, -/C.3/R.45, -/C.3/R.48, -/C.3/R.57, -/C.3/R.58 (together with an informal list of corrections) and -/C.3/R.72 (English only, together with additional comments and information). The observer from CPI withdrew his document -/C.3/R.15 and asked the Sub-Committee to discuss instead a new set of proposals, derived from that document, which were presented in English and French jointly by CPI and HMAC. The observer from HMAC confirmed his organization's involvement; some negotiation had been necessary to achieve agreement between the two organizations on the new proposals.

59. The new documents did not fall readily under the sub-items for the agenda. The Sub-Committee considered what course to pursue. There could be an open forum but it was essential to make progress and not to turn the clock back. Possibly a pragmatic solution would be to identify those tasks which might be accomplished in 1990 for endorsement by the Committee and those tasks requiring longer for completion.

60. The expert from the Netherlands referred to his document ST/SG/AC.10/C.3/R.31 which proposed a strategy for the revision of Class 2. The main innovation was to put all details into a new chapter of the Recommendations dedicated to Class 2 so that only the basic definitions would remain in chapter 1. There being no objection to this proposal the Sub-Committee began with the definitions in chapter 1. Experts were reminded that annex 1 to document -/C.3/R.12 presented the latest proposed definitions.

61. The observer from CPI presented the joint CPI/HMAC proposals for definitions essentially in line with those in annex 1 to document -/C.3/R.12. His latest presentation would provide a more suitable basis for discussion because it included the most recent thinking of the industry. The experts from France, the Federal Republic of Germany and the Netherlands sponsored the CPI/HMAC proposals for discussion. There was no objection to their being considered as the basis for discussion of definitions in chapter 1.

62. The definition for a gas in document -/C.3/R.12, paragraph 1.14 was adopted after deleting the words "(or less)". A proposal in document ST/SG/AC.10/R.209, paragraph 4, to delete clause 1.14 (b) was not supported.

63. The CPI/HMAC proposal for paragraph 1.15 was adopted with two small changes as shown in annex 1 to this report.

64. CPI and HMAC proposed several additions to the text in paragraph 1.16. After considerable discussion two of these additions were not accepted but it was agreed to mention mixtures of gases, etc. A footnote proposed by CPI/HMAC was not accepted. The adopted text is shown in annex 1 to this report.

65. The definition for Division 2.1 in paragraph 1.17 proposed by CPI/HMAC led the expert from the Federal Republic of Germany to propose a different criterion for flammable gases as set out in his document ST/SG/AC.10/C.3/R.57. This proposal would delete clause (a) as included in document -/C.3/R.12 and attracted some support. The expert from the Union of Soviet Socialist Republics repeated an alternative proposal originally made during the thirty-eighth session of the Group of Rapporteurs; it would curtail clause (b) after the word "air". The observer from HMAC implored the experts to give full consideration to the serious impact on industry if the criterion in document ST/SG/AC.10.C/3/R.57 were adopted.

66. The Chairman asked the Sub-Committee to decide first whether they wished to change the text for Division 2.1 or not. After that decision they could consider possible amendments. By a vote of 8 to 6 it was decided not to proceed with the proposal by the expert from the Federal Republic of Germany. There was no support for a proposal by the expert from the Netherlands to exclude ammonia from the definition of Division 2.1. The Sub-Committee therefore adopted the definition proposed by CPI/HMAC subject to a reference to mixtures of gases and clarification that "12%" meant "12 percentage points", as shown in annex 1 to this report.

67. For Division 2.2 CPI/HMAC proposed a substantial modification to the basic definition in annex 1 of document ST/SG/AC.10/C.3/R.12 in order to specify the hazardous properties which warranted such gases being classified as dangerous goods. Difficulties were encountered with this proposal relating to the classification of gases or mixtures of gases with mildly corrosive properties and of articles filled with air. The expert from the United States of America had proposed in his document ST/SG/AC.10/C.3/R.58 that an additional clause should be added to the definition to include only non-flammable, non-toxic gases when they are transported at a pressure not less than 280 kPa at 20° C or as refrigerated liquids. Finally the secretariat distributed a draft definition incorporating two clauses from the CPI/HMAC proposal, one clause proposed by the United States of America and a general note proposed by the expert from France. The Sub-Committee adopted this definition in principle by 7 votes to none.

68. For Division 2.3 CPI/HMAC initially proposed an additional clause (c) dealing with corrosivity. The observer from HMAC withdrew that proposal and proposed instead a note dealing with the classification of gases having a highly corrosive effect on tissue. The qualification "highly" was not acceptable to some experts. Several experts were not clear whether the effect of the proposal would be to require a subsidiary risk label for Class 8 on all gases with any degree of corrosivity to tissue. To clarify this matter an addition was proposed to the note drafted by HMAC to specify that gases meeting the applicable criteria should be labelled with the Class 8 subsidiary risk label. This proposal (i.e. the note with the addition, as shown in annex 1 to this report) was adopted after a vote.

69. The Sub-Committee next considered the classification of mixtures of gases. CPI/HMAC proposed a new paragraph in the Recommendations between the existing paragraphs 1.17 and 1.18 to deal with flammability, toxicity and corrosivity. As regards flammability the CPI/HMAC proposal was adopted, subject to placing a reference to an imminent ISO standard (ISO/DIS-10156) in square brackets pending its publication, as shown in annex 1 to this report.

70. As regards the toxicity of mixtures of gases, the CPI/HMAC proposal was adopted subject to the addition of the words "through testing" proposed by the expert from the United States of America. The adopted text is shown in annex 1 to this report.

71. The expert from the Federal Republic of Germany asked the Sub-Committee to revert to the definition of Division 2.2 which had been adopted in principle (para. 67 above). He proposed inserting an additional clause between (b) and (c) to deal with gases which exhibit a corrosive effect on living tissues and which have an LC_{50} exceeding 5,000 ml/m^3. The expert from Canada supported this proposal and stressed the vulnerability of the human eye to corrosive gases. However, the proposal was rejected by a vote of 8 to 2.

72. The experts from Canada and the United Kingdom sought to reopen discussion on the insertion of the words "through testing" (para. 70 above). They considered the words were redundant and gave the impression that the Sub-Committee was encouraging the testing of animals. The expert from the United States of America believed the addition was helpful and that it did not encourage the testing of animals. The expert from France proposed as a compromise that the words should be transferred to the end of the sentence with the qualification "if this is the only practical possibility". This was agreed.

73. As regards the corrosivity of mixtures of gases, the experts from Canada and the Union of Soviet Socialist Republics proposed an addition to the CPI/HMAC proposal to take account of human experience. The expert from the United States of America opposed this addition but it was accepted by a substantial majority. The expert from France considered the word "human" to be redundant at any rate in French.

74. As regards the formula for calculating the LC_{50} of a corrosive mixture of gases, the expert from the Federal Republic of Germany proposed an additional sentence reading "a mixture is corrosive when the sum of the corrosive components in that mixture is 2% or more". This addition was not adopted. The proposal by CPI/HMAC was adopted by a substantial majority.

75. As regards the oxidizing ability of a mixture of gases, the CPI/HMAC proposal was adopted subject to its being placed in square brackets until the ISO Standard mentioned therein had been published.

76. As regards the precedence of hazards of gases in the new divisions of Class 2, the CPI/HMAC proposal gave rise to an alternative proposal by the expert from Canada who preferred the text set out in document ST/SG/AC.10/C.3/R.12, annex 1, paragraph 1.17A. Experts expressed opinions for and against those alternatives. A possible reason for adopting one rather than the other was that Amendment No. 25 to the IMDG Code was said to be based upon one of them. In the absence of the observer from IMO and since the secretariat had been unable to acquire a copy of the latest IMDG Code through the official channels, the Sub-Committee was unable to ascertain which alternative IMO would have preferred. The CPI/HMAC proposal was adopted by a vote of 12 to 3.

77. The Sub-Committee considered proposals concerning the remaining text of chapter 1 of the Recommendations. The observer from CEFIC informed the Sub-Committee that paragraph 1.16 was causing problems when dangerous goods were inerted with nitrogen. He asked experts to study the problem in preparation for a submission at a future session. The expert from Canada questioned the usefulness of the current paragraph 1.18 in the light of all the decisions taken during the current session. The expert from the United States of America proposed that it be deleted and this was agreed.

78. All the adopted text for chapter 1 is shown in annex 1 to this report.

79. The Sub-Committee then considered proposals for chapter 13 of the Recommendations. The observer from CPI withdrew his new proposal for paragraph 13.3.6. However, the expert from the United States of America saw merit in the proposal and, subject to small amendments, sponsored it for adoption. It was adopted as shown in annex 1 to this report.

80. A CPI/HMAC proposal for table 13.2 was modified to take account of the decisions taken earlier in the session and then adopted in principle. The Sub-Committee agreed on the concept of a tabular presentation. The expert from Canada offered to study the table and submit a document proposing any necessary refinements for the next session.

81. The observer from CPI explained his proposal to amend paragraph 13.4.1 of the Recommendations. There were practical difficulties in affixing labels on gas cylinders in certain circumstances, for example in batteries of cylinders lying flat one upon another. It was necessary to allow the labels to be on the non-cylindrical part of the cylinders or to attach the labels in some other suitable manner. Experts rejected the phrase "means of transport" to describe a battery of cylinders or manifolded cylinders; this phrase should be reserved to indicate a vehicle, wagon, ship, etc. Several experts sympathized with the objective to permit labels of smaller dimensions to be used or for the label to be placed elsewhere than on the cylindrical part of the gas container. The expert from the United States of America proposed a new paragraph 13.4.9. The Sub-Committee expressed the need for a consensus for the reduced-sized label in order to obtain uniform recognition and the proposal was placed within square brackets as shown in annex 1 to this report. Industry would be invited to make appropriate proposals.

82. The expert from the United States of America pointed out that a consequential amendment was necessary in paragraph 13.3.1 (b) of the Recommendations. In line 5 of the English text the phrase "non-flammable compressed gases" was changed to "non-flammable, non-toxic gases".

83. The expert from Canada withdrew document ST/SG/AC.10/C.3/R.45.

84. The observer from HMAC pointed out that paragraph 13.5.2 of the Recommendations should be revised in accordance with the proposal in document -/C.3/R.58, annex D (page 29 of the English text). This was agreed.

85. The Chairman noted the good progress made on the revision of Class 2 during the current session. The Sub-Committee decided to continue with Class 2 for half the remaining day of the session.

86. The expert from Canada announced that many of the points in his document ST/SG/AC.10/C.3/R.5 had been covered during the current session. However, he asked that -/C.3/R.5 be carried forward to the next session since the annexes to it provided the only complete list of entries in chapter 2 which had been fully aligned with the sixth edition of the Recommendations. This was agreed.

87. The proposals in document ST/SG/AC.10/C.3/R.48 (United Kingdom) provided a starting point for the long-term proposal by the expert from the Netherlands to introduce a system of generic entries in Class 2. The document took account of the Canadian proposal in document -/C.3/R.4. Some experts felt that the proposals in -/C.3/R.48 should be postponed for completion along with the Netherlands proposal; others supported the United Kingdom proposal for immediate changes. After discussion of the text of the proposals in -/C.3/R.48, it was adopted by 11 votes to 2 subject to editorial changes by experts from the United Kingdom and Canada to align the text with the earlier decisions. The edited text is given in annex 1 to this report.

88. The proposals in document ST/SG/AC.10/C.3/R.4 required updating in the light of decisions taken earlier in the session. Accordingly the expert from Canada withdrew his proposals for compressed or liquefied gases, corrosive, n.o.s. and for compressed or liquefied gases, flammable, corrosive, n.o.s. The Sub-Committee first dealt with the proposal for compressed or liquefied gases, oxidizing n.o.s. This name was divided into separate entries for compressed and for liquefied forms. The expert from the United States of America asked what shipping name would be used for reconstructed air and was satisfied with the reply from the expert from Canada that it should be called "COMPRESSED AIR". The two entries were then adopted by a vote of 8 to none.

89. The third proposal in document ST/SG/AC.10/C.3/R.4 related to refrigerated liquids, n.o.s. The expert from France found difficulty with this as a name for a gas and it was agreed to change the name to "GASES, REFRIGERATED LIQUID, N.O.S.". The new entry was then adopted after deleting the proposed subsidiary risk "8". The observer from HMAC invited experts to consider the potential hazard of mixing such gases. Possibly a new special provision should be proposed for the next session.

90. The Sub-Committee decided not to discuss document ST/SG/AC.10/R.203 as it was no longer relevant.

91. All the adopted text for gases is shown, in the appropriate sequence of paragraphs, in annex 1 to this report.

ROUTINE LISTING AND CLASSIFICATION OF DANGEROUS GOODS

92. The proposal in document ST/SG/AC.10/C.3/R.29 had been brought forward from the previous session during which the expert from France had been requested to check certain data (ST/SG/AC.10/C.3/2, para. 82). Additional information was provided but experts requested still more data concerning corrosivity on metals, inhalation toxicity, skin exposure and the significance of methanesulphonyl chloride in international transport. The expert from Canada noted that this substance had been listed in the second edition (1962) of Patty's Industrial Hygiene and Toxicology but had been omitted from the third edition (1981). No decision was taken and the document was carried forward to the third session.

93. The proposal in document ST/SG/AC.10/C.3/R.30 had been brought forward from the previous session during which the expert from France had been requested to check certain data (ST/SG/AC.10/C.3/2, para. 83). The expert from the Netherlands presented comments upon the French proposal. There was discussion of the extent to which chloroacetic acid was transported in the molten form. The written proposal was modified and adopted together with corresponding entries in chapter 12 and the index as shown in annex 1 to this report.

94. The proposal in document ST/SG/AC.10/C.3/R.42 provided a data sheet in substantiation of the decision taken during the first session for the listing and classification of pentachlorophenol (ST/SG/AC.10/C.3/2, annex 2). The information was noted and no change was made to the earlier decision.

95. The proposal in document ST/SG/AC.10/C.3/R.49 was adopted without change. An oral proposal by the expert from the United States of America to retain the proper shipping name "INK, printer's, flammable" as it appears in the sixth edition as opposed to "PRINTING INK", was not adopted (see annex 1 to this report).

96. The proposal in document ST/SG/AC.10/C.3/R.50 expressed doubts as to whether or not oxalic acid was a dangerous substance. Since it was as soluble as many oxalates already classified in Division 6.1, there was a case for including oxalic acid in the entry for UN No. 2449. The experts from the United States of America and the Union of Soviet Socialist Republics opposed the proposal because the data did not support this change and hence it was not adopted. However, the expert from Canada acknowledged the need for a future proposal to deal with this anomaly, possibly by classifying oxalic acid as mildly corrosive.

97. Documents ST/SG/AC.10/R.227 and ST/SG/AC.10/C.3/R.2 were related and considered together. The proposal, to change in chapter 2 the subsidiary risk for UN No. 1048, was adopted.

98. Documents ST/SG/AC.10/R.233 and ST/SG/AC.10/C.3/R.3 were related and considered together. Some experts felt that adoption of these proposals was a retrogade step in view of the decisions taken earlier in the session. It was suggested that the document should be carried forward for a decision after a second reading of the new definitions adopted during the current session. Since ammonia was such an important industrial product, the Sub-Committee was requested to be very careful not to make a hasty decision. It was agreed to

await a new submission from the expert from Canada which would update both his documents for the next session. Experts were invited to consider whether the text of Special Provision 23 was adequate to cover the flammability risk of ammonia.

99. The proposal in document ST/SG/AC.10/C.3/R.51 was adopted without change.

100. The proposals in document ST/SG/AC.10/C.3/R.55 were not adopted although experts recognized that they addressed an important matter, the classification of propane mixtures. The expert from the Federal Republic of Germany challenged the analogy with butane mixtures which had been drawn in the document. Several experts sought clarification of the word "mixtures" in this context. It appeared that liquefied petroleum gas was assigned to UN No. 1075 in North America but UN No. 1965 in Europe. The expert from the United Kingdom was invited to clarify those points and make a revised submission for the next session.

101. Finally, the expert from the Union of Soviet Socialist Republics presented a far-reaching proposal to align all the names of chemicals in chapter 2 of the Recommendations with the names according to the rules of the International Union of Pure and Applied Chemistry (IUPAC). Several experts wholeheartedly supported the use of the system nomenclature recommended by IUPAC. The expert from the Federal Republic of Germany mentioned that IMO had adopted, in principle, the use of the IUPAC system of nomenclature. The expert from Canada advised that there were North American and European variants of the rules. The expert from the United States of America counselled the Sub-Committee to take full cognizance of the practicality and economic aspects of suddenly changing many proper shipping names. The proposal was carried forward to the third session.

LIAISON WITH THE UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP) AND WITH THE INTERNATIONAL LABOUR ORGANISATION (ILO)

102. The Chairman introduced two observers from UNEP and thanked them for addressing the Sub-Committee in order to give a progress report since its last session in August 1989. The observer from UNEP introduced his colleague who had been appointed as Co-ordinator of the interim secretariat established by UNEP to implement the Basel Convention. The Co-ordinator summarized the accomplishments during the last six months. The European Economic Community and 41 States had signed the Convention. Technical guidelines were being developed; harmonization of procedures under the Basel Convention for international transactions involving nuclear waste was being discussed in detail; a mechanism providing technical assistance was being developed; consideration was being given to drafting elements for a protocol on liability and work was proceeding on the relationship between the Basel and London Conventions.

103. It was announced that the United Kingdom would be submitting a proposal for the next session of the Sub-Committee concerning the transport of waste dangerous goods. The value of the good rapport between the secretariats of the Sub-Committee and UNEP which had been established and the importance of maintaining liaison in order to harmonize any technical provisions in future was stressed.

104. The Chairman introduced an observer from the ILO International Occupational Safety and Health Information Centre (CIS/ILO), who explained the functions of the ILO, the Safety Information Centre CIS as well as the International Programme for Chemical Safety (IPCS) which was a tripartite programme ILO/UNEP/WHO. CIS made available to the public essential safety data in the form of paper bulletins and compact discs (CD-ROM).

105. The observer from ILO explained the significance of the change to article 2 (c) (iv) of the draft convention on "Safety in the use of chemicals at work." The ILO secretariat had originally proposed to restrict the draft convention to the transport of chemicals inside an enterprise; transport on the open road would have been excluded. The ILO Conference in June 1989 adopted a text, by which the draft convention should be extended to the transport of chemicals in all circumstances covered by the phrase "at work".

106. The Conference had adopted a resolution recognizing the value of the existing system of classification and labelling for transport of dangerous goods by all modes; expressing concern about the various systems for classification and labelling of chemicals used at work; and inviting the ILO to assess the task of harmonizing national and regional criteria and classification systems consistent with the United Nations Classification System for transport of dangerous goods. This last task would be undertaken jointly by ILO/UNEP/WHO under the aegis of the IPCS.

107. The Chairman pointed out that it was impractical to deal with rapid developments in this field by formal sessions of the Sub-Committee. He was grateful that the secretary had intervened successfully during the 1989 Conference and sought the Sub-Committee's authority for a member of the secretariat to participate in informal meetings and the 1990 Conference in order to present the Sub-committee's views. This was agreed.

108. The secretary described the tactics which had prevailed during the 1989 Conference and stressed the importance of experts in the Sub-Committee taking steps to influence their national delegates to the ILO Conference in 1990. The ILO delegates from certain States, participating also in the Sub-Committee, were in particularly influential positions in regard to the draft Convention.

109. At the request of the observer from ILO the Chairman requested the secretariat to submit to ILO, an extract from this report. The observer from ILO undertook to keep the United Nations secretariat informed of developments and reassured the Sub-Committee that there was no intention to duplicate the Sub-Committee's work on classification and labelling of dangerous goods. The ILO would welcome advice from the Sub-Committee.

(a) Implementation of the Recommendations by Canada, the United States and ICAO

110. The expert from the United States of America asked for a general discussion concerning progress made by other States on the implementation of chapter 9 of the United Nations Recommendations. He indicated that the United States was pursuing adoption of chapter 9 and hoped to take final action before the end of 1990. If chapter 9 was adopted for domestic shipments, a transition period, likely to be five years, would be provided, and one of the many benefits would be the elimination of more than 400 pages

of United States' regulations. During the discussion he also described other major changes entering into force in his country on 4 June 1990 regarding improved communication of emergency response information and technical information for collective entries on shipping documents consistent with chapter 13. Telephone numbers (which could be in a foreign country) would also be required on transport documents for obtaining additional and more detailed information on shipments 24 hours a day, and the carriage of response information with shipments for immediate use by initial responders to incidents.

111. The observer from ICAO stated that the new edition of the ICAO Technical Instructions would require the use of packaging conforming to chapter 9 of the United Nations Recommendations from 1 January 1991. Packagings in accordance with former provisions such as those of the International Air Transport Association would no longer be acceptable. However, provisions for limited quantities had been introduced in line with chapter 15 of the Recommendations. The requirements for radioactive material had been amended to implement the International Atomic Energy Agency's Transport Regulations, 1985 edition and its 1988 Supplement.

112. The expert from Canada explained that following the abolition of the Canadian Transport Commission his own part of the Department of Transportation dealt with safety matters for the transport of dangerous goods by rail including approvals of portable tanks. In future greater emphasis would be placed on process assurance. He suggested that it would be very helpful if the United Nations Recommendations were to include a list of State reservations or exceptions, by analogy with that in the ICAO Technical Instructions, in order to disseminate information on packagings which had been assessed and rejected. The Chairman acknowledged the usefulness of such a list of reservations but doubted if the secretariat would be given the resources to produce such a list and to keep it up to date.

(b) Proposal for new work: genetically modified organisms

113. The Commission of the European Community had requested preliminary discussion of the transport of genetically modified organisms. Copies of a draft proposal by that Commission were distributed informally.

114. There was a short discussion on the importance of maintaining good collaboration between the secretariats of the EEC and the UN/ECE. The observer from the EEC assured experts that in Brussels there was every intention of taking full account of the deliberations of the Sub-Committee and that the opinions of experts were appreciated. A number of experts responded expressing disappointment that participation of the EEC in sessions of UN/ECE meetings had not been regular and hoping that collaboration would be improved for the future.

115. The paper distributed on the subject of transport of genetically modified organisms was in French only and experts had seen it for the first time the previous day. They expressed the wish for an opportunity to study the paper in detail with their national specialists before expressing opinions on the technical content. There was a discussion on general matters such as the need for a new class or division for these novel substances, packaging, labelling, etc. One view expressed was that the existing class 9 and entries UN Nos. 3077 and 3082 (environmentally hazardous substances, solid or liquid respectively)

might provide a sufficient solution. Several national specialists on division 6.2, the nearest related classification, would not be attending the session until the second week. The expert from Canada pointed out that the agenda for the current session and the next one were already overloaded and perhaps the new subject should be tackled in the next biennium.

116. The secretariat was requested to send to the Commission of the EEC a report on the discussions on the review of Division 6.2 (infectious substances) later in the session and, subsequently, to discuss with the Commission the possible form and content of a formal submission for the third session of the Sub-Committee.

(c) Address by the Senior Adviser to the Executive Secretary

117. The Senior Adviser to the Executive Secretary, Mr. T. Malloch, addressed the Sub-Committee in order to provide a report on progress since his address to it in August 1989 (ST/SG/AC.10/C.3/2, paras. 13 to 21). He mentioned that the Transport Division had an IBM micro-computer and a second one was being installed. Three lap-top computers had been acquired by ECE for use during meetings and mission on a shared basis. A local area network was being set up to link terminals throughout ECE. The electronic era was definitely imminent for ECE. He assured the Sub-Committee that the Executive Secretary would shortly take up the issue of additional manpower for work on dangerous goods pursuant to the resolution and decision of the Economic and Social Council during its second regular session of 1989. Concerning issues of resources and relative priorities for the many projects within ECE, he informed the meeting that on the occasion of the Commission's session in April 1990, in accordance with its decision A44, the Permanent Missions would be able to discuss ECE's proposed budget for 1991-1992 in relation to its plan of work; there would be complete transparency and the possibility for Governments to determine their priorities and where resources should go.

118. The Director of the Transport Division followed up this news by assuring the Sub-Committee that in future the United Nations Recommendations and the ADR would be published on time, or even ahead of time, by virtue of the computers which would enable the staff to process all the amendments gradually after each session thereby avoiding a huge backload of word processing at the end of each biennium. A prerequisite for this was of course an additional member of the general staff trained to input the amendments into the computer.

119. The Chairman, while grateful for these reassurances, emphasized that in the light of the important issues being discussed it was essential to assure the credibility of the work of both the secretariat and the governmental bodies concerned. It was no use to promote co-operation with organizations such as the United Nations Environment Programme (UNEP), the Organisation for Economic Co-operation and Development (OECD) the International Labour Organisation (ILO) and the European Economic Commission (EEC) if the secretariat could not deliver the goods on time. While recognizing the substantial improvements in the past year or so he pointed out that there was no cause for complacency. It had still taken 12 months after the Committee's fifteenth session to publish the Recommendations in English and French and the editions in the other four languages were not yet available. Volume I of the ADR was already 15 days overdue and volume II would not be available until

some two months after the new provisions entered into force. The secretariat had stated that work on the new edition of the Manual of Tests and Criteria had not even begun as yet because there was only one person to type all the corrections for each version of the Recommendations, ADR and the Test Manual.

120. The expert from the United States of America expressed concern over the lack of availability of the Recommendations in North America and while wondering why the Committee still did not derive benefit from the revenue of its best selling publication, as proposed in a number of resolutions of the Economic and Social Council, suggested that it might be given to private printing under some contract with the United Nations. The observer from Australia mentioned that over 10,000 copies of the most recent edition had been published in Australia by using a floppy disc to update the Recommendations without waiting for the official publication in Geneva. He offered to come to some arrangement for private printing in Australia.

121. Mr. Malloch explained that the United Nations Publications Board had looked into this. The revenue went into a central pool which was used to reduce national contributions to the United Nations budget in subsequent years. Thus Governments had no incentive to direct to other use funds obtained through the sale of publications.

122. The expert from France, while recognizing the improvements and welcoming the assurances concerning the future, pointed out that the basic problem persisted; many formal documents for the current session had not been available until the first day. The agenda had been in the Distribution Section for seven weeks due to the backlog of work. At the 1989 session of the Working Party on the Transport of Dangerous Goods (WP15), representatives had seriously questioned the political will to retain the servicing of the ADR within ECE. If the ECE could not or would not provide the resources to do the job properly, some other organization such as the EEC would readily step in to do so and that would cause confusion that would be prejudicial to safety.

123. The expert from Canada recalled that two years ago the servicing of the Committee and its subsidiary bodies had deteriorated to the point where Canada seriously considered withdrawing its membership. He acknowledged the improvement since then but warned of the pitfalls of transition to an electronic office system.

124. The expert from the United States of America pointed out that all the various Economic and Social Council resolutions adopted lately which referred to allocation of additional resources to the work in this area had used the phrase "make available within existing resources". Mr. Malloch said this was the crux of the problem for the ECE. An extra professional and an extra general staff person could be made available for dangerous goods work only at the expense of some other work of ECE and on this there was as yet no consensus in the Commission.

Recent press releases

125. The observer from IRU drew attention to a recent Press Release from his Organization announcing the publication of a new edition of its guide to the ADR. This guide was based on the imminent 1990 edition of the ADR and was

available in English only. A member of the secretariat distributed copies of Press Release ECE/TRANS/1 dated 15 January 1990 which gave information about publication of the English and French editions of the United Nations Recommendations 1989 and the imminent ADR 1990.

(e) General discussion on packaging requirements

126. The expert from the United States of America asked the Sub-Committee to consider a number of questions concerning performance packaging requirements in order to elicit information from each of the States. He wanted to find out how other competent authorities interpreted, and how rigorously they applied, the provisions on packaging in chapters 9 and 16 of the United Nations Recommendations. He recognized that the Sub-Committee had a very full agenda and that his list of questions distributed informally would not result in any decisions during the current session. Nevertheless, he was convinced that many experts would benefit from an open forum on these issues.

127. An informative discussion ensued. At the end, a number of experts expressed appreciation to the expert from the United States of America for having provoked a wide-ranging exchange of ideas and information. They agreed that it had been well worthwhile even though it had not led to any decisions or amendments for the time being. Several experts suggested a similar open forum would be useful at some future session.

(f) Other proposals for changes to the Recommendations

128. The observer from Australia introduced document ST/SG/AC.10/C.3/R.64 in which he proposed a new method of distinguishing between the types of ammonium nitrate assigned to UN Nos. 1942 and 2067. He proposed to invoke the test for determining the resistance of a fertilizer to detonation adopted by the European Communities. There was no support for the proposal so it was not adopted. It did however give rise to a number of criticisms of the rather cumbersome entries for ammonium nitrate in the Recommendations. The expert from the United States of America suggested that the Committee of Experts might be invited during its sixteenth session (December 1990) to take up the subject so that in the following biennium this item of future work could be tackled. The Chairman cautioned against a free ranging discussion in the Committee without a carefully prepared written document recapitulating the very long and complex background to the existing entries for fertilizers.

129. The expert from Canada asked about interpretation of the word "film" in regard to laminated film and proposed an amendment to paragraph 6.14.3 in the light of improved plastics which were now available. With some slight modification the proposal was accepted as shown in annex 1 to this report.

130. The Sub-Committee discussed briefly an informal written request from IMO received by FAX during the session. The request was for the re-instatement of UN No. 1856 for RAGS, OILY. The majority of experts felt that this would not adequately deal with the problem. It was later suggested that an entry in the Index should cross-refer "Rags, oily" to UN No. 3088. The representative of the United States felt that this would lead to some confusion, so the idea was not pursued. The Sub-Committee declined to reinstate this entry and asked the secretariat to advise IMO to deal with its problem in the IMDG Code by some other means, possibly by using one of the other entries in chapter 2 of the Recommendations.

131. In document ST/SG/AC.10/C.3/R.63 the observer from Australia presented proposals for modifying the criteria for Class 3 by introducing the concept of a "Fire Point" (c.f. Flash Point). There were a number of liquids which had to be transported as in Class 3 but which would not sustain combustion. Australia had used a Fire Point in classification for a number of years with safe and satisfactory results. The experts from the United Kingdom and the Federal Republic of Germany said their countries were working along those lines. It was understood that ISO was also studying the idea. Experts from other countries expressed their interest, especially as the likely result of their work would be beneficial to industry. It was decided to carry forward the document to the next session and to request the Secretary to ascertain what progress had been made by ISO.

132. The observer from ICAO presented document ST/SG/AC.10/C.3/R.67 which proposed a new table 15.1 of recommended maximum quantities for some Class 9 substances when carried in limited quantities. It was suggested that the list might be useful for other modes in adopting chapter 15 and the table could be extended at a later date. The observer from EFMA said he would like to seek opinions on the proposed fertilizer entry before the next session and suggested delaying any decision. However, none of the experts supported such a delay and the proposal was adopted as shown in annex 1 to this report.

133. In document ST/SG/AC.10/C.3/R.68 the expert from the United States of America proposed an amendment to the footnote below table 15.1. This would align with a change recently made by ICAO which was designed to extend the footnote to cover pastes and powders. The expert from France suggested wording which would say the same thing in a clearer way and it was adopted as shown in annex 1 to this report.

134. The observer from Australia presented document ST/SG/AC.10/C.3/R.69 which proposed splitting Class 8 into three subdivisions, the intention being to facilitate segregation between acids, alkalis and other corrosive substances. The expert from the Federal Republic of Germany stated that the IMDG Code already included provisions for segregating acids and alkalis where necessary; he could not support the proposal. However, the expert from the Union of Soviet Socialist Republics said the existing IMDG requirements were difficult to apply, his country already used three subdivisions for this class so he supported the idea. Some other experts expressed interest in the concept, although it was seen that it might be a case of choosing perfection or practicality. The observer from ICAO did not think such a change would improve safety for the air mode. It was also pointed out that there had been no reported accidents with the existing system. By a vote of 7 to 1 it was decided not to pursue the subject during the current biennium. The observer from Australia was invited to present a revised paper to the next session of the Committee, if he so wished.

135. Document ST/SG/AC.10/C.3/R.70 was presented by the observer from Australia. He was puzzled that some subsidiary risks did not require a subsidiary risk label. The observer from HMAC drew attention to paragraph 13.3.3 which stated the need to identify "<u>important</u> subsidiary risks". He went on to explain that in constructing table 13.1 the intention had been to exclude some subsidiary risks as a proliferation of labels could be counter-productive. The smaller the number of packages with multiple labels, the more attention they would attract. The observer from Australia accepted that explanation, withdrew his paper and thanked the Sub-Committee for considering his papers.

136. The observer from CEFIC asked that document -/C.3/R.60 be carried forward to the next session. The expert from the Federal Republic of Germany said he intended to submit a similar proposal for the next session.

137. The expert from the United States of America repeated the plea he had made on previous occasions for the reports of sessions to be simplified. This was a technical not a political committee and some formality could be dispensed with; for example his delegation from the United States of America was quite happy being referred to as the US. Furthermore it seemed unnecessary always to specify in full the United Nations symbol of a document.

FUTURE WORK

138. It was agreed that the following documents should be carried forward to the third session: ST/SG/AC.10/R.220; -/AC.10/R.221; ST/SG/AC.10/C.2/R.604; -/C.2/R.671; -/C.2/R.672; ST/SG/AC.10/C.3/R.5; -/C.3/R.9; -/C.3/R.13; -/C.3/R.29; -/C.3/R.32; -/C.3/R.34; -/C.3/R.35; -/C.3/R.36; -/C.3/R.37; -/C.3/R.38; -/C.3/R.50; -/C.3/R.58; -/C.3/R.60; -/C.3/R.63.

139. The secretariat distributed a preliminary draft of the provisional agenda for the third session. On the basis of comments and a review of the documents which had been dealt with during the second session, the following programme of work for the next session was agreed:

FIRST WEEK

Review of Division 4.1; Manual of Tests and Criteria; Liaison with EEC, ILO and UNEP; Review of Class 2; Use of Proper Shipping Names and UN Numbers for "Not Otherwise Specified" Entries; and Revision of paragraph 1.10.

SECOND WEEK

Matters concerning Class 1; Review of Division 6.2; Matters concerning Packaging including IBCs; Routine Listing and Classification of Dangerous Goods; Any Other Business and Adoption of the Report.

140. Explosives' specialists should plan to participate in a working group discussion on the Manual of Tests and Criteria on Thursday and Friday of the first week as well as the plenary discussion on Class 1 on the Monday, Tuesday and possibly Wednesday of the second week. A working group would be set up during the first week as had been done during the current session, to review Division 4.1 and afterwards the Manual of Tests and Criteria.

141. Experts were particularly requested to submit proposals to arrive in the secretariat at least 11 weeks before the first day of the session, i.e. to arrive in Geneva by 17 April 1990. There should be no late papers; 70 copies of any genuine information papers (i.e. comments upon formal documents) should be brought to the session.

ADOPTION OF THE REPORT

142. The Sub-Committee adopted the report on its second session together with its annexes.

Annex 1

ADOPTED TEXT FOR THE UNITED NATIONS RECOMMENDATIONS

(Document ST/SG/AC.10/1/Rev.6)

1. Chapter 1:

(a) Replace paragraphs 1.14 to 1.17 and the heading by the following:

"Class 2 Gases

1.14 A gas is a substance which:

(a) at 50° C has a vapour pressure greater than 300 kPa; or

(b) is completely gaseous at 20° C at a standard pressure of 101.3 kPa.

1.15 The transport condition of a gas is described according to its physical state as:

(a) Compressed gas - a gas (other than in solution) which when packaged under pressure for transport is entirely gaseous at 20° C;

(b) Liquefied gas - a gas which when packaged for transport is partially liquid at 20° C;

(c) Refrigerated liquid gas - a gas which when packaged for transport is partially liquid because of its low temperature;

(d) Gas in solution - compressed gas which when packaged for transport is dissolved in a solvent.

1.16 The class comprises compressed gases; liquefied gases; gases in solution; refrigerated liquefied gases; mixtures of gases; mixtures of one or more gases with one or more vapours of substances of other classes; articles charged with a gas; tellurium hexafluoride; aerosols.

1.17.1 Substances of Class 2 are assigned to one of three divisions based on the primary hazard of the gas during transport.

Division 2.1 Flammable gases

Gases which:

(a) are ignitable when in a mixture of 13% or less by volume with air; or

(b) have a flammable range with air of at least 12 percentage points regardless of the lower flammable limit.

Division 2.2 Non-flammable, non-toxic gases

Gases which:

(a) are asphyxiant - gases which dilute or replace the oxygen normally in the atmosphere; or

(b) are oxidizing - gases which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does; or

(c) do not come under the other divisions.

Such gases are included in Division 2.2 only when they are transported at a pressure not less than 280 kPa at 20°C or as refrigerated liquids.

Division 2.3 Toxic gases

Gases which:

(a) are known to be so toxic to humans as to pose a hazard to health; or

(b) are presumed to be toxic to humans because they have an LC_{50} value equal to or less than 5,000 ml/m^3 (ppm) when tested on laboratory animals in accordance with paragraph 6.5 (c).

Note: Gases exhibiting a corrosive effect on tissue fall within the above criteria and are included in Division 2.3. Such gases should bear the corrosive subsidiary risk label.

1.17.2 Mixtures of gases

For the classification of gas mixtures into one of the three divisions (including vapours of substances from other classes) the following principles may be used:

(a) [Flammability is determined by either tests or calculation methods adopted by the International Standards Organization.]

(b) The level of toxicity is determined by either tests on laboratory animals in accordance with paragraph 6.5 (c) or a calculation method using the following formula:

$$LC_{50}\ \text{Toxic (mixture)} = \frac{1}{\sum_{i=1}^{n} \frac{fi}{Ti}}$$

where fi = mole fraction of the i^{th} component substance of the mixtures

Ti = Toxicity index of the i^{th} component substance of the mixture (the Ti equals the LC_{50} value when available).

When LC_{50} values are unknown the toxicity index is determined by using the lowest LC_{50} value of substances of similar physiological and chemical effects, or through testing if this is the only practical possibility.

(c) A gas mixture has a subsidiary risk of corrosivity: when the mixture is known by [human] experience to be destructive to the skin, eyes or mucous membranes or when the LC_{50} value of the mixture's corrosive components is equal to or less than 5,000 ml/m^3 (ppm) where the LC_{50} is calculated by the formula:

$$LC_{50}\ \text{Corrosive (mixture)} = \frac{1}{\sum_{i=1}^{n} \frac{fi_c}{Ti_c}}$$

where fi_c = mole fraction of the i^{th} corrosive component substance of the mixture

Ti_c = Toxicity index of the i^{th} corrosive component substance of the mixture (the Ti_c equals the LC_{50} value when available).

(d) [Oxidizing ability is determined either by tests or by calculation methods adopted by the International Standards Organization.]

1.17.3 Hazard precedence

Gases and gas mixtures with hazards associated with more than one division take the following precedence:

(a) Division 2.3 takes precedence over all other divisions;

(b) Division 2.1 takes precedence over Division 2.2."

(b) Delete paragraph 1.18.

(c) Modify paragraph 1.23 to read:

"Division 6.2 Infectious substances

Substances containing viable micro-organisms including a bacterium, virus, rickettsia, parasite, fungus, or a recombinant, hybrid or mutant, that are known or reasonably believed to cause disease in animals or humans.

Note: Toxins (bacterial, phytogenic or animal toxins) which do not contain any infectious substances or organisms or which are not contained in them should be considered for transport as Division 6.1."

(d) Delete the Note at end of paragraph 1.23.

2. Chapter 2:

(a) For UN No. 1048 amend "6.1" in column (b2) to read "8".

(b) For UN No. 1210 amend:

"1210	INK printer's, flammable	3	102 187	M "

to read

"1210	PRINTING INK, flammable	3	102 163 187	M "

(c) Amend the entries for UN Nos. 1750, 1751 to read:

(a1)	(a2)	(b1)	(c1)	(c2)
"1750	CHLOROACETIC ACID, SOLUTION	6.1 8	II	M
1751	CHLOROACETIC ACID, SOLID	6.1 8	II	M "

(d) Add the following entries:

"(a1)	(a2)	(b1)	(b2)	(b3)	(c2)
3156	COMPRESSED GASES, OXIDIZING, N.O.S.	2.2	5.1	109	
3157	LIQUEFIED GASES, OXIDIZING, N.O.S.	2.2	5.1	109	
3158	GASES, REFRIGERATED LIQUID, N.O.S.	2.2		109	
3159	TETRAFLUOROETHANE	2.2			M"

(e) For UN No. 1408 delete "41" in column (b3).

(f) Amend the entries for UN Nos. 1953, 1954, 1955 and 1956 as follows:

		(b1)	(b2)	(b3)
"1953	COMPRESSED GASES, TOXIC, FLAMMABLE, N.O.S.	2.3	2.1	109
1954	COMPRESSED GASES, FLAMMABLE, N.O.S.	2.1		109
1955	COMPRESSED GASES, TOXIC, N.O.S.	2.3		109
1956	COMPRESSED GASES, N.O.S.	2.2		109"

(g) Add four new United Nations entries as follows:

"3160	LIQUEFIED GASES, TOXIC, FLAMMABLE N.O.S.	2.3	2.1	109
3161	LIQUEFIED GASES, FLAMMABLE N.O.S.	2.1		109
3162	LIQUEFIED GASES, TOXIC N.O.S.	2.3		109
3163	LIQUEFIED GASES, N.O.S.	2.2		109"

3. Chapter 3:

(a) Delete the Special Provision 41;

(b) Amend Special Provision 198 to read:

"Nitrocellulose solutions containing not more than 20% nitrocellulose may be transported as paint or printing ink as applicable. See UN Nos. 1210, 1263 and 3066".

4. Chapter 6:

(a) Change the subparagraph 6.9 (a) to read:

"(a) 'Infectious substances' are those substances containing viable micro-organisms, including a bacterium, virus, rickettsia, parasite, fungus, or a recombinant, hybrid or mutant, that are known or reasonably believed to cause disease in animals or humans."

(b) Add at the end of paragraph 6.9 (a):

"Except where it is known that they do not contain any infectious substances, biological products and diagnostic specimens should be treated as infectious substances."

(c) Add at the end of subparagraph 6.9 (b) the following note:

"Note. In certain cases, some licensed vaccines may present a biohazard only in certain parts of the world. In that case competent authorities may require these vaccines to comply with the requirements for infectious substances or may impose other restrictions."

(d) Delete the text of paragraph 6.10 and replace it by two new paragraphs:

"6.10.1 Biological products known to contain, or thought likely to contain, any infectious substances should meet all the requirements for infectious substances. Other biological products also should meet all of the provisions for infectious substances, except that they are not subject to any other provisions for infectious substances when the following conditions are met:

(a) the primary receptacle(s) contains (contain) not more than 50 ml;

(b) the outer packaging contains not more than 50 ml when fragile primary receptacle(s) is (are) used and 100 ml for other primary receptacle(s);

(c) the primary receptacle(s) is (are) leakproof;

(d) the packaging is in accordance with paragraph 6.13.

6.10.2 Diagnostic specimens known to contain, or thought likely to contain, any infectious substances should meet all the requirements for infectious substances. Other diagnostic specimens also should meet all of the provisions for infectious substances, except that they are not subject to any other provisions for infectious substances when the following conditions are met:

(a) the primary receptacle(s) contains (contain) not more than 100 ml;

(b) the outer packaging contains not more than 500 ml;

(c) the primary receptacle(s) is (are) leakproof;

(d) the packaging is in accordance with paragraph 6.13."

(e) In paragraph 6.13.3 amend:

"the primary receptacle and the secondary packaging" to read:

"the primary receptacle or the secondary packaging".

(f) Modify the second and third sentences in paragraph 6.14.3 to read:

"For outer packagings, the headings in the table relate to fibreboard or similar materials whose performance may be rapidly affected by moisture; plastics which may embrittle at low temperature and other materials such as metal whose performance is not affected by moisture or temperature. Where a primary receptacle and a secondary packaging of an inner packaging are made of different materials, the material of the primary receptacle determines the appropriate test."

5. Chapter 7:

In paragraph 7.1 amend the third sentence to read:

"The IAEA Regulations contain the following specific restriction: Account shall be taken of the formation of other dangerous substances which may result from the reaction between the contents of a consignment and the atmosphere or water in the event of breaking of the containment system caused by an accident (see para. 208 of the IAEA Regulations)."

(Note that clause (b) is thereby deleted.)

6. Chapter 9:

(a) Insert in paragraph 9.3.12 immediately after clause (b) the following new sentence:

"The inner receptacle of composite packagings may be tested without the outer packaging provided the test results are not affected."

(b) Add at the end of paragraph 9.5.1 (g) the following sentence:

"The letters 'SP' designate a special packaging, see 9.7.1.7".

(c) Paragraph 9.7.1.6, add at the end:

"In addition, provided an equivalent level of performance is maintained, the following variations in inner packagings are allowed without further testing of the package:

(a) Inner packagings of equivalent or smaller size may be used provided:

(i) The inner packagings are of similar design to the tested inner packagings (e.g. shape - round, rectangular, etc.);

(ii) The material of construction of the inner packagings (glass, plastics, metal, etc.) offers resistance to impact and stacking forces equal to or greater than that of the originally tested inner packaging;

(iii) The inner packagings have the same or smaller openings and the closure is of similar design (e.g. screw cap, friction lid, etc.);

(iv) Sufficient additional cushioning material is used to take up void spaces and to prevent significant movement of the inner packagings;

(v) Inner packagings are oriented within the outer packaging in the same manner as in the tested package;

[(vi) The total number of inner packagings does not exceed that originally tested.]

(b) A lesser number of the tested inner packagings, or of the alternative types of inner packagings identified in (a) above, may be used provided sufficient cushioning is added to fill the void space(s) and to prevent significant movement of the inner packagings."

(d) Renumber paragraphs 9.7.1.7 and 9.7.1.8 as 9.7.1.8 and 9.7.1.9. Insert a new paragraph 9.7.1.7 to read:

"9.7.1.7 Inner packagings of any type for solids or liquids may be assembled and transported without testing in an outer packaging under the following conditions:

(a) The outer packaging should have been successfully tested in accordance with 9.7.3 with fragile (e.g. glass) inner packagings using the Packing Group I drop height.

(b) The total combined gross mass of inner packagings should not exceed one-half the gross mass of inner packagings used for the drop test in (a) above.

(c) If the number of inner packagings is different from the number of inner packagings used in the drop test in (a) above, the cushioning thickness between inner packagings and that between inner packagings and the outer package should not be reduced. When either fewer or smaller inner packagings are used (as compared to the inner packagings used in the drop test), sufficient additional cushioning material should be used to take up void spaces.

(d) The outer packaging should have passed successfully the stacking test in 9.7.6 while empty. The total mass of identical packages should be based on the combined mass of inner packagings used for the drop test in (a) above.

(e) Inner packagings containing liquids should be completely surrounded with a sufficient quantity of absorbent material to absorb the entire liquid contents of the inner packagings.

(f) When the outer packaging is intended to contain inner packagings for liquids and is not leakproof, or is intended to contain inner packagings for solids and is not siftproof, a means of containing any liquid or solid contents in the event of leakage should be provided in the form of a leakproof liner, plastics bag or other equally efficient means of containment.

(g) For air transport, packagings should comply with 9.3.4.1.

(h) Packagings should be marked in accordance with 9.5 as having been tested to Packing Group I performance for combination packagings. The marked maximum gross mass may not exceed one half the gross mass used for the drop test with inner packagings referred to in (a) above. In addition, the marking required by 9.5.1 (g) should include the letters 'SP'."

(e) Amend paragraph 9.7.2.1 to read:

"9.7.2.1. Tests should be carried out on packagings prepared as for transport including, with respect to combination packagings, the inner packagings used. Inner or single receptacles or packagings should be filled to not less than 95% of their capacity for solids or 98% for liquids. For a combination packaging where the inner packaging is designed to carry liquids and solids, separate testing is required for both solid and liquid contents. The substances or articles to be transported in the packagings may be replaced by other substances or articles except where this would invalidate the results of the tests. For solids, when another substance is used it should have the same physical characteristics (mass, grain size, etc.) as the substance to be carried. It is permissible to use additives, such as bags of lead shot, to achieve the requisite total package mass, so long as they are placed so that the test results are not affected."

7. Chapter 12:

(a) In table 12.1 add the following entry:

"1	2	3	4	5	6	7
3159	Tetrafluoroethane (R134a)		17.7 15.7 13.8 12.1	Allowed	Normal	1.03 "

(b) In table 12.2:

(i) Amend UN No. 1210 in column (2) to read "Printing Ink, flammable",

(ii) Amend UN No. 1750 in column (2) to read "Chloroacetic acid solution"; in column 3 to read: "6.1/II"; in column 4 insert the digit "8".

(iii) Add the following entry:

1	2	3	4	5	6	7	8	9
[1751	Chloroacetic acid, solid	6.1/II	8	2.65	12.52	N.A.	N	12.22.3]"

8. Chapter 13.

(a) In paragraph 13.3.1 (b) amend "non-flammable, compressed gases" to read "non-flammable, non-toxic gases".

(b) Amend paragraph 13.3.6 to read:

"Three separate labels have been provided for Class 2: a red label for Division 2.1 (flammable), a green label for Division 2.2 (non-flammable, non-toxic) and a white label for Division 2.3 (toxic). When the list indicates that a Class 2 gas possesses single or multiple subsidiary risks, labels should be used in accordance with table 13.2. In each case, only the primary risk label shown in column 3 should bear the class number in the lower corner."

(c) Replace table 13.2 with the following:

"[Table 13.2 - LABELS FOR CLASS 2 GASES WITH SUBSIDIARY RISK(S)

Division	Subsidiary risk(s) shown in chapter 2	Primary risk label (with Class No. '2' in the lower corner)	Subsidiary risk label(s)
2.1	None	(Red)	None
2.2	None	(Green)	None
	5.1	(Green)	5.1
2.3	None	(White)	None
	3	(White)	3
	5.1	(White)	5.1
	5.1, 8	(White)	5.1, 8
	8	(White)	8

]"

(d) Insert a new subparagraph as follows:

"13.4.9. [When gases in cylinders constitute a full load for the transport unit (as defined in 13.7.2) labels may be reduced in size as appropriate for display on the non-cylindrical (shoulder) portion of such cylinders.]"

(e) Amend figure 13.2, Class 2 as follows:

(i) Add the title "Division 2.2" and rename the green label "Non-flammable, non-toxic gases";

(ii) Add the title "Division 2.1" to the red label "Flammable gases";

(iii) Add the title "Division 2.3" to the white label "Poison (toxic) gases".

(f) In figure 13.13 in the box "Marks and number", etc., insert the words:

"PACKING GROUP" after "HAZARD CLASS/DIV."

(g) Modify 13.6.1 as follows:

"(c) The UN No. and, where assigned, the Packing Group for the substance or article;"

(h) Amend paragraph 13.8.4, at the end of the last but two sentences, to read: ".. the technical name of the goods and the applicable packing group."

(i) Add in table 13.3 the following entries:

"3156 COMPRESSED GASES, OXIDIZING, N.O.S.
3157 GASES, REFRIGERATED LIQUID, N.O.S.
3158 LIQUEFIED GASES, OXIDIZING, N.O.S.
3160 LIQUEFIED GASES, TOXIC, FLAMMABLE, N.O.S.
3161 LIQUEFIED GASES, FLAMMABLE, N.O.S.
3162 LIQUEFIED GASES, TOXIC, N.O.S.
3163 LIQUEFIED GASES, N.O.S."

(j) Amend table 13.3 as follows:

"1953 COMPRESSED GASES, TOXIC, FLAMMABLE, N.O.S.
1954 COMPRESSED GASES, FLAMMABLE, N.O.S.
1955 COMPRESSED GASES, TOXIC, N.O.S.
1956 COMPRESSED GASES, N.O.S."

(k) Delete from paragraph 13.8.5.1 UN No. 1954.

9. Chapter 15:

(a) In paragraph 15.1 change "table 15.1" to read "tables 15.1 and 15.2".

(b) Amend footnote (a) of table 15.1 to read:

"This limit may be increased to 1,000 ml for aerosols not containing toxic substance(s)."

(c) After table 15.1, add:

"Table 15.2: QUANTITY LIMITATIONS FOR CLASS 9

UN No.	Proper shipping name	Maximum quantity per inner packaging
1941	DIBROMODIFLUOROMETHANE	5 l
2071	AMMONIUM NITRATE FERTILIZERS	5 kg
2209	FORMALDEHYDE SOLUTIONS	5 l

"

10. Chapter 16:

(a) Insert in paragraph 16.5.5.1 after the first sentence:

"Another IBC of the same design may be used for the drop test as set out in paragraph 16.5.9.6."

11. Index:

(a) Add the following entries:

"COMPRESSED GASES, OXIDIZING, N.O.S.	2.2	3156
GASES, REFRIGERATED LIQUID, N.O.S.	2.2	3157
LIQUEFIED GASES, OXIDIZING, N.O.S.	2.2	3158
TETRAFLUOROETHANE	2.2	3159
LIQUEFIED GASES, FLAMMABLE, N.O.S.	2.1	3161
LIQUEFIED GASES, N.O.S.	2.2	3163
LIQUEFIED GASES, TOXIC, N.O.S.	2.3	3162
LIQUEFIED GASES, TOXIC, FLAMMABLE, N.O.S.	2.3	3160"

(b) Amend the following entries:

"COMPRESSED GASES, FLAMMABLE, N.O.S.	2.1	1954
COMPRESSED GASES, N.O.S.	2.2	1956
COMPRESSED GASES, TOXIC, N.O.S.	2.3	1955
COMPRESSED GASES, TOXIC, FLAMMABLE, N.O.S.	2.3	1953"

(c) Delete the entry "CHLOROACETIC ACID, LIQUID"

(d) Add the entries:

"CHLOROACETIC ACID, SOLUTION	6.1	1750
Ink, printer's, flammable, see	3	1210
Monochloroacetic acid, see	6.1	1750
	6.1	1751
PRINTING INK, flammable	3	1210"

(e) Add in column "Class" of the entry CHLOROACETIC ACID, SOLID, "6.1"

Annex 2

REPORT OF THE WORKING GROUP ON INFECTIOUS SUBSTANCES

1. Delete the **Note** at the end of paragraph 1.23 in the Recommendations.

2. Add at the end of paragraph 6.9 (a):

> "Except where it is known that they do not contain any infectious substances, biological products and diagnostic specimens should be treated as infectious substances."

3. Add two new paragraphs:

"6.10.1 Biological products known to contain, or thought likely to contain, any infectious substances should meet all the requirements for infectious substances. Other biological products also should meet all of the provisions for infectious substances except that when the following conditions are met, they are not subject to any other provisions for infectious substances:

(a) the primary receptacle(s) contains (contain) not more than 50 ml;

(b) the outer packaging contains not more than 50 ml when fragile primary receptacle(s) is (are) used and 100 ml for other primary receptacle(s);

(c) the primary receptacle(s) is (are) leakproof;

(d) the packaging is in accordance with paragraph 6.13.

6.10.2 Diagnostic specimens known to contain, or thought likely to contain, any infectious substances should meet all the requirements for infectious substances. Other diagnostic specimens should also meet all of the provisions for infectious substances except that when the following conditions are met, they are not subject to any other provisions for infectious substances:

(a) the primary receptacle(s) contains (contain) not more than 100 ml;

(b) the outer packaging contains not more than 500 ml;

(c) the primary receptacle(s) is (are) leakproof;

(d) the packaging is in accordance with paragraph 6.13."